1st Annual Nanopolicy Conference

NanoWorld: Toward a Policy for the Human Future
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Prepared Remarks of Rep. Mike Honda

Thank you for having me here today, I'm glad to be here. Thanks to Nigel Cameron for the invitation.

This is the kind of discussion I think that we as policy makers, and as Americans should be having more of.

I've been asking most everyone who comes in to talk with me about nanotechnology - what they or their organization are doing in the area of ethics.

I first met Nigel at a conference in 2004 when I talked about the responsibility that scientists and policy makers have to engage with the public in discussions about this early on, before problems are upon us.

At that time, I made a point about how the debate about stem cell research might have proceeded differently had such conversations taken place, and that I wanted to prevent the same thing from happening with nanotechnology.

Today, I want to make a point about a difference I see between stem cells and nanotechnology, one which I think bodes well for our chances of making more progress on reaching more of a consensus on nanotechnology.

In comparing the ethics of stem cell research with those of nanotechnology, I think we should look at two separate sets of ethical questions that arise from stem cell research.

One set of issues is the fairly intractable one that arises from the use of embryonic stem cells. Those of us in this room, like people from across this nation, hold fundamentally different views on when life begins.

What this means is that some of us feel it is acceptable to use stem cells from embryos, which destroys them in the process, while others of us believe that destroying embryos is destroying life, which is wrong.

These are two very different polar positions, and resolving them is quite challenging.

The standoff has led to different policies at the state and federal level, depending on which mindset has the power in that jurisdiction. I'm not going to try to solve this problem here, and we all know how tough it is.

I'd rather look at the other set of ethical questions that come along with stem cell research. In this case, we can benefit from thinking about the kind of stem cell research that is more widely accepted, research that uses adult stem cells.

In this case, no embryos are destroyed, thus taking that issue away. And I think those of us in this room who hold both positions on embryonic stem cell research can agree about the potential benefits of adult stem cell research, which might also be able to bring about new treatments and cures for diseases.

But there is still a set of ethical questions that go along with even the use of adult stem cells, a big question in particular being how far should we go?

And in this area, I think that we are able to find more common ground than we could on whether embryonic stem cells should be used.

If I need a new kidney and we can use adult stem cells to grow a new one, I think we could all agree that that is probably a good idea.

But if the only way to do that would be to grow an entirely new "me" and then cut out its kidney, I think we all agree that that isn't such a good idea, that cloning a human being is a bad idea because it raises all sorts of ethical questions (especially if you want to harvest its organs).

We have been able to agree that there is a place to draw a line on things like this, and I believe we can end up doing something similar in the area of nanotechnology.

I also think it is essential that the conversation not just take place among scientists or policymakers, or between those two groups.

The general public has to live with this stuff. They are the ones who need to find it acceptable. And so we need to engage with them as we try to figure out where and how the line is to be drawn.

There are going to be extremes on both sides – some will argue for no limits, maybe envisioning a world in which our mind and spirit might be separated from our physical bodies and able to live forever in a machine.

Others will say that we should allow no biological applications of nanotechnology, that nature should be left to run its course.

Where we will end up is somewhere in the middle. We find manufactured vaccines or treatments for diseases acceptable using human grown biologics.

Is an artificial "nano-antibiotic" that can kill bacteria really so far from that? Well, I think what we'll find is that this depends somewhat on how it works.

We find glasses acceptable for those who have imperfect eyes. Is an artificial "nano-retina" that improves eyesight really so far from that? Again, it will depend.

If it can provide performance that exceeds the regular human eye and lets us see new wavelengths and greater distances, then we are talking about something very different than just correcting a defect to the normal level.

Hearing aids? Again, fine if you are just restoring normal function, but a whole new question if you are increasing the frequencies one can hear and enabling someone to eavesdrop on very quiet conversations. And do deaf people really want this?

We are going to have to look very carefully at applications where nanotechnology is combined with biological systems and decide if we are willing to allow applications that improve human performance or not. Do those applications change what it is to be human?

Do we really want to allow those changes to take place? Is it something that people should have individual choice over?

Is it really possible to have individual choice, anyway – if one person does something like implanting a memory chip or math processor (if those were ever developed in a way that could be implanted in a human using nanotechnology), does it mean that everyone has to just to keep up?

Which among us would be able to afford it?

These are weighty questions, and I don't pretend to know the answers. They are big questions, ones that everyone needs to play a role in making.

Fortunately, we don't have to make these decisions immediately, because the technology is still in its infancy. But we will need to start soon, because once research begins it will be difficult to slow down.

So what we need to do now is to educate the public to a point where they can talk intelligently about these technologies.

Then we need to have conversations about where the technologies should go, so that we can shape informed policies based on those public concerns.

Thank you again for having me here today. I think the issues are discussing are important ones, and the fact that you are having this discussion is essential to the successful application of nanotechnology.